perpetrators, the true nature of architecture, and wherein it differs from painting: the former is addressed to the reason more than to the eye, and though a knowledge of what contributes to effect in painting is of incalculable use to the architect, he should be careful above all things not to abuse it when acquired.

The laws of composition require that pediments on a large scale should be at the summit of a building; also that different tiers of small window pediments should be of different forms and proportions, the circular above the rectilinear, the more pointed or steepest above the flatter ones: this likewise secures variety, and is a better method of securing it than having them varying on the horizontal line, as at the Banqueting House, Whitehall.

As to pediment forms, the only variety introduced upon the original is the circular or segmental, which, on a small or a medium scale, is a very beautiful one. This form does not admit of actroteria, as no exterior ornament will unite with its circular cornice,—it, like the dome, having no apex. Nor does it need extraneous decoration, which could only disturb the eye as it ranged over its orbed summit.

For the pitch or inclination of the pediment there are æsthetic laws, which govern it according to the order it crowns, the extent of its base, and the contemplated expression; and proportions are given by Vitruvius, Scamozzi, and Serlio; but as the pediment, when employed with sincerity, is always the end of a real roof small or large, extended or fragmentary, for protection more or less important from weather, these laws must give way, or at least be influenced and modified by exigencies of climate and material of covering. The pediment in England should, I think, invariably be loftier than it was in Greece; for though on a small scale and where lead is used as a covering, æsthetic laws may have more sway or be the sole guide, yet for the sake of general harmony considerations of climate should have influence in all.

The omission by the Greeks in their pediments of the crowning member of the base cornice is deserving of notice: there is less need of it for protection, and besides the production of greater variety and subordination among the parts of the pediment by its absence, a more artistic and harmonious junction is effected between the horizontal and inclined cornices. The exquisite feeling with which the Greek pediment is formed will cause it ever to be looked upon as not the least of the triumphs of his genius. Neither Gothic nor Roman architect carried his feeling for the beautiful into the minutiæ as did the Greek.

The omission, wholly or in part, of the horizontal cornice, which a reference to the theory of the pediment must show to be a non-essential feature, is allowable in domestic buildings where required by a special purpose, but the absurdity of cutting the raking ones is apparent immediately on consideration of their structural office. It is a gross abuse, however the pediment may be applied; for, though placed over attached columns of a doorway, and therefore affording no shelter, or not so palpably a roof, the pediment may yet have the appearance of being useful to enclose something,—a shield of arms, for instance; but, when the raking cornice is discontinued, even this idea is destroyed, and the thing is utterly meaningless. Besides, it is wrong æsthetically: it bears the appearance of mutilation, which the scroll or other ornamental termination seems a vain attempt to heal.

Vitruvius says that the ancients did not allow of modillions at all in the pediment, an assertion that seems to favour the wood-cabin hypothesis of the origin of orders; but there is a sufficient æsthetic reason for their use, as well as for mutules when the tympanum is not occupied by sculpture, viz. their breaking or giving a varied line to the shadow on the tympanum. Besides, they yield at least the appearance of support to the superior and more projecting members of the cornice. Modillion shadows, however, are not only needless when the pediment is filled with sculpture, but, by causing a confusion of shadows, they would be injurious to the general effect of the composition. In St. George's Hall, Liverpool, they have on this account been very properly omitted by Mr. Elmes, who had always, I understand, an eye to sculptural embellishment: besides, irrespective of the shadows they cast, the part of the architecture immediately contiguous to a grand sculptural subject should be quiet in itself, so as not to disturb the eye. Painters like a plain flat surface next to their pictures, however rich the frames may otherwise be. Whether when used the modillions stand exactly over those of the entablature cannot, I think, be of much consequence, as the eye could scarcely detect a deviation. Their sides should invariably preserve a perpendicular position.

As to the decoration of the pediment, its tympanum appears formed for its reception, and, in truth, it is the most natural place, and that first calls for it; interior decoration being more necessary and important than exterior,—a maxim that applies to other departments of architecture, but too often violated in all. Acroteral figures, should not be applied until the tympanum has received its share of attention, and should economy dictate that but one be decorated, the latter should have the preference. The chief defect of many important buildings consists in this, that whilst considerable decoration has been spent elsewhere, the great central pediment, which has the first and greatest claim, is left plain. The principle I contend for has been very properly allowed to govern in the application of sculpture to St. George's Hall, though another important principle has been neglected: the subject of the sculpture has no relation to either law or music, the purposes to which the building is destined,—a fault that arose, however, from no mistake of the designer as it was originally intended for another building.

If the thing supported is more honourable than the support, the entablature should be made to exceed in decoration the column; the archivolt should be more elaborate than the pier; and the pediment than either; and to place a vacant pediment above fluted Corinthian columns, is to invert the natural order of things. But the deficiency manifests itself to the eye ere the mind has time to reason on the subject; and the surrounding cornices, complete, perhaps, in modillion or dentil decoration, and enriched mouldings, must (except in the smallest examples, as windows or niches) appear as the border of an empty panel, a rich frame without a picture, or despoiled of one. There is, moreover, no place more susceptible of effective decoration, where it would contribute more to the expression of the building, or ordonnance it crowns, or for which we have grander precedents: the pediment is not less susceptible of decoration than the Gothic or Tudor gable; but what would Gothic architecture be without its pierced and traceried gables and ogee canopies?

A great paucity of decorative invention has been shown, I consider, in reference to the pediment interior in modern times, though in reality there is, perhaps, no feature more susceptible of embellishment. Certainly it is not less so than the Gothic gable, which, with its beautiful niche, or highly decorated rose window, must remind us that we have not drawn with sufficient freedom or boldness on the resources of geometrical form in the embellishment of the Classic pediment. Any square opening or cutting in a gable is a mutilation, but the circle inserted in the triangle has a harmonious and magical effect, and in the low triangle of the pediment would have the advantage over one in the equilateral triangle of the Gothic, in producing unequal spandrels. The circular and semicircular window, with radiating bars, would be a beautiful decoration in pediments, as the marigold or Catherine-wheel window of the Gothic gable will attest. In fact, geometrical divisions, on the general principle of the Gothic gables, and analogous to tracery, are as proper in the one style as in the other. For such ornamentation in domestic buildings there can be no lack of pretext or justification; nay, utility would often dictate it, necessity enforce it. Windows for an upper apartment are often required, and where no window is needed, an aperture for air to the roof might receive form and decoration consistent with the place it occupied.

In the higher class of domestic buildings, for a shield of arms, with its figure or animal supporters, and other decorative accompaniments, there could be no fitter place than the tympanum of the pediment, while for the latter there could not be a more appropriate decoration than such a subject, provided it be on a scale sufficiently large, it being no ornament when a mere spot in the centre. It was a most important decoration with the Renaissance architect, and the panels of the later Gothic might be considered as so many frames, nay the entire building frequently a shrine, for the hieroglyphics of heraldry. After a historical subject it is really the most effective and important decoration that could be employed in domestic structures. For some commercial or other kinds of edifices, a clock of a single sober tint, as grey or stone colour, or executed in white marble, with figure embellishments, as Time, the Hours, or the like, would not be inappropriate or inelegant. In some a semicircular niche, containing a bust or small group might be introduced.

So important a feature, however, is the pediment, so much decorative detail is employed in its formation, that in great buildings, and over a purely Classic portico, the highest class of embellishment is, I consider, called for. I believe no ornament, save the human figure, no decoration but a subject in relief, possesses sufficient dignity to be the ornament of the pediment: no arrangement or combination of wreaths or festoons, or harmony of geometrical forms, is worthy to fill such a place. The frieze may be worthily ornamented with foliage, or with abstract lines of beauty; but such decoration looks weak and tame in the pediment of the grand style of architecture.

Such, doubtless, was the feeling of the Greeks, whose successful practice of the highest sculptural embellishment has perhaps never since been equalled, though it cannot be denied that mediæval and other architects, of widely distant periods, were remarkably eminent in the harmonious uniting of sculpture and architecture: such is the exquisite union of the two art elements in several of the Gothic edifices of the fourteenth and fifteenth centuries, that it is impossible, in viewing them, to entertain the idea of more than one designer; and even in Egypt the Colossi and Sphinxes are not isolated monuments, but essentially architectural elements of expression and power.* S. H.

SWING BRIDGE ON SOUTH-EASTERN RAILWAY.—At the Institution of Civil Engineers, Mr. C. May read a paper, lately, on the "Swing Bridge over the River Rother, at Rye, on the line of the Ashford and Hastings Branch of the South-Eastern Railway." This bridge was constructed by Messrs. Ransomes and May, of Ipswich, from designs by Mr. P. W. Barlow. The girders are 112 feet long, 3 feet 6 inches deep in the centre, and 2 feet 6 inches at the ends, made up in four lengths, one joint being in the centre, immediately over the support, and the others between the centre and the ends. They are secured together at their ends by cross girders; the underside planed and inclined, so as to be slightly lifted, when swung home to their places, on girders secured to the land piers. Provision is made on the underside of the main girders, at three places on each side of the centre of the bridge, for receiving the tie-bars, which all tend to one point over the middle. Each tie-bar is 4 inches by 1 inch in section, and adjustable for tension by a right and left-handed screw, the nut of one end in the tie-bar, and the other between two plates of wrought-iron resting on the side standards, or A-frames, which are connected together by a wrought-iron arch. The turning of the bridge is effected by spur gearing, worked from a platform, projecting from the face of each girder. Two men, it was added, can with ease open the bridge in two minutes. The total weight of metal in the moving part, exclusive of the roadway, is said to be about 130 tons.

* To be continued.

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